

Public Works ...



Moving forward

2014 Edition

Special points of interest:

- Public Works increased winter liquid program by 400%.
- 78 of the 95 traffic signals in Council Bluffs are connected to a fiber network.
- 58,037 square yards of street will be replaced with approx. 7,000 tons of asphalt and joint sealing.
- New storm station being constructed in west end.
- Repairing clarifiers expected to extend life of the structures another 10 years.

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Pat Miller, Director—OPERATIONS

2014 recipient of National Excellence in Snow and Ice Award

APWA's Excellence in Snow and Ice Control Award was established to promote excellence in the management and administration of public works snow and ice operations, and to promote the best practices in snow and ice removal while minimizing environmental impacts. One of the three awards was presented to Council Bluffs at the 2014 APWA North American Snow Conference, May 4-7, in Cincinnati, Ohio.

City of
Council
Bluffs,
Iowa



Throughout the winter months, the City of Council Bluffs Public Works Department provides snow and ice control for its 588 lane miles of road network. Snow removal is performed with assistance from the Sewer Division and other divisions on a 24-hour schedule when snow events develop. During snow maintenance operations snow removal is prioritized by designated emergency snow routes, hills and then residential. Snow removal begins when any accumulation of snow/ice develops on city streets. Public Works staff is on call seven days a week, 24 hours a day.

A new brine blending system, along with ever-improving distribution equipment, has placed Council Bluffs on the leading edge of chemical treatments. Both the pre-wet and pre-treatments have reduced salt usage by as much as 30% in the past two years alone. The hope is to go even further in the near future with ever-improving blends and chemical experimentation. State-of-the-art pretreatment programs, along with added distribution equipment, have

added several more miles of pre-treatments to city streets before a storm strikes.

2013-2014 Winter Maintenance update:

It has been the goal of Public Works Operations to reduce the environmental impact of road-salt. If we were to take a 16 ounce bottle of water and add a tablespoon of salt to it, it would become bitter and undrinkable. If we took that same bottle of water and put it on a shelf for a year and tried to drink it, it would still remain undrinkable; it would not have changed. If we took that same bottle of water, poured it in a pan and boiled the water away, the tablespoon of salt would still remain in the pan. The effects of salt are very difficult to dispose of. Even though we may not, at this point, have a total and safe solution to de-icing and making streets safe without salt, we are making every attempt to reduce its impact and perhaps, in the near future we will have suitable substitute.

What are we doing now?

In 2012-13 Public Works added a liquid anti-ice and deicing blending system. This system blends salt (sodium chloride (NaCl)) with water to create a base liquid of 23% salt solution brine (diluted salt water). Using the solution as a pre-wet to salt reduces bounce, speeds up the brining process (the point where salt melts ice), increases bonding effect, and in turn uses less salt and is more cost effective. Salt alone with the

brine solution is effective at temperatures of approximately 27-degrees Fahrenheit. When we add organic solution such as beet juice we can decrease the effective working temperature of the pre-wet salt to as low as 15-degrees and increase salt melting capacity by as much as 28%. This solution will also increase the residual effect by as much as 60%. A super mix of brine, beet and calcium chloride can reduce working temperature down to -12-degrees and increase the melting process as much as 60%. What this equates to is using fewer chlorides, which is much better on the environment, achieving better results and a more cost effective approach to winter maintenance.

Public Works has increased its liquid program by 400% over the past few years and with the new blending system has added less than 30% to its cost of liquids alone (\$16,853-\$21,978) and reduced salt usage by as much as 30%. Public Works has expanded



its anti-icing process to more city streets, including all emergency routes, hills and intersections in residential areas. In 2014-2015 Public Works will be adding to its winter maintenance arsenal a 1800 gallon capacity anti-icing/de-icing trailer distributing system, which will increase our speed and effectiveness in reacting to a winter storm event.



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Redflex money at work

Dave McDermott, Fleet Superintendent—FLEET MAINTENANCE

Fleet has the responsibility to purchase equipment for different departments. Fleet has developed a "New Equipment Request Form" in which the basic information is collected and justification is given for the equipment requested. It provides the necessary information for developing a specification so that businesses can bid on supplying the vehicle or equipment that will best serve the City of Council Bluffs. The funding for these purchases comes from a variety of places.

The vehicles pictured represent one of the more unusual funding sources. Everyone has an opinion when it comes to the red light cameras, referred to as Redflex cameras, but the funds generated from these cameras is earmarked for "Public Safety". The units shown meet the criteria as Public Safety.



NEW FOUR-WHEEL DRIVE

The police four wheel drive SUV will serve as a response vehicle, especially during winter weather. Our normal police vehicle was a Ford Crown Victoria but Ford suspended production of the Crown Vic. The Crown Vic was a dependable vehicle for years in our Police Department but had limitations in the winter. With the more severe storms, the Crown Vic had to have its rear wheels chained up to be able to negotiate snow covered street. The

problem with chains is the body damage that occurs when a chain slaps the wheel well area causing at a minimum paint damage. Another drawback is that the top speed with chains on is 35 miles per hour—not an efficient way to respond to some police calls. That is the reason two four wheel drive SUV's were purchased out of the Redflex Camera Fund.



CAB/CHASSIS FOR TRAFFIC



FINISHED TRAFFIC SIGN

The cab/chassis is a Public Works – Traffic Division truck. As you can see there is only a cab and frame. A fiberglass body was later mounted on the exposed frame area.

The justification for the use of the Redflex funds to purchase this vehicle is because this truck responds to knocked down or missing signs. It also checks sign conditions and replaces signs that are faded or ineffective.

The line painting truck for our Traffic Division will paint all the white road edge markings and the yellow or white center lines.



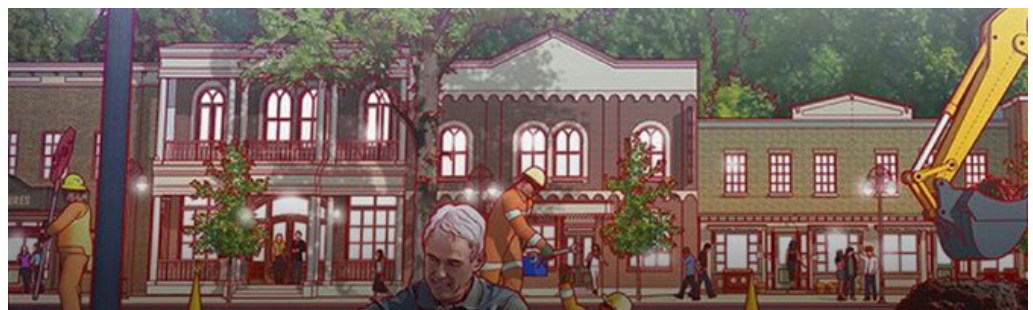
NEW LINE PAINTING TRUCK



REAR OF THE LINE PAINTING TRUCK

Our current truck was adapted out of a used chassis. The technology was antiquated and the personnel were exposed to many safety issues. This truck also qualifies as a public safety purchase and will be funded by the Redflex Camera money.

Although the Red Light Camera system has been very controversial, statistically it has reduced traffic accidents. The use of these funds, generated from violators, is being put to work on much needed equipment that serves public safety. The vehicles purchased with this money will serve the City of Council Bluffs for years to come.



Mark Franz, Traffic Superintendent—TRAFFIC

Advanced traffic signal management in Council Bluffs

Traffic signal communications in Council Bluffs have come a long way in just a few years. As recently as 2009, most Council Bluffs traffic signals communicated with each other and with the old City Public Works Traffic shop on 2nd Avenue over telephone modems at a painfully slow rate of 1,200 bits per second. That communication was limited strictly to the signal controllers.

In 2009 the Iowa Department of Transportation (IDOT), in order to provide support for the coming Interstate rebuild in Council Bluffs, installed a system of fiber optic cables to support monitoring cameras and data collection devices. They are mostly along the Interstates, but also along some State highways in Council Bluffs, including Broadway, Kanesville, and Veterans Memorial Highway. In exchange for using some City underground conduits to install fiber, the IDOT also agreed to connect most of the traffic signal cabinets along those State highway routes.

Recognizing this unique opportunity, the

Council Bluffs Public Works Department made the commitment to purchase the network equipment and traffic signal controllers that would allow the creation and use of a high speed data network. At almost the same time, the new Public Works Operations Facility on 10th Avenue was being designed and built. It was decided then to add a Traffic Operations Center to the new building to house the servers and monitors for the new equipment.



Today, 78 of the 95 traffic signals in Council Bluffs are connected to an Ethernet network, which operates much like the Internet by using fiber optic cable capable of 1 Gigabyte per second communications. That's a capacity that is 1 million times higher than just five years ago! That extra bandwidth has made possible the installa-

tion of monitoring cameras at over 40 intersections. In addition most of the other signal components in the signal cabinets are now "on line".

There are multiple advantages to having the Signal Network. Technicians have the ability to remotely monitor and manage traffic signals, including adjusting timing and troubleshooting problems. This can be done anywhere the Internet is available – even from home! Equipment suppliers can "remote in" from anywhere in the country to assist with set up or troubleshooting. Advantages of the video cameras include saving video for later vehicle counting, Police and Fire Department investigations, and allowing the Public Works Streets Division to monitor intersections during snow removal.

Thanks to the Public Works Department and the Iowa DOT, Council Bluffs can be proud to have one of the most advanced traffic signal networks in the country.

Jeremy Noel, Manager of Streets and Sewers —OPERATIONS

Street repairs coming to an area near you

The Street Dept. will continue our mill/overlay program this construction season. We have completed Madison Ave./S. 1st St. which is a big improvement. Crews worked diligently to complete the project in a timely manner.



Some of the areas included this year will be: 700 block of Mynster, S. 21st St. from Broadway to 5th Ave., S. 28th St. from 5th Ave. to 9th Ave., N. Broadway from Kanesville to Locust Lodge, Gleason Ave. from McPherson to Morningside and Morgan Ave. from Harrison to Marshall. The plans will include the milling of approx. 58,037 square yards to be replaced with approx. 7000 tons of asphalt and joint sealing to follow. Curb and gutter repairs and replacement will also be completed during this process.

The Street Dept. will also be making numerous concrete repairs around the city which will include panel replacement, curb replacement, ADA ramp placement and mudjacking.

We are happy to introduce our first "Asphalt Recycler" to the fleet. We are now able to take our asphalt and asphalt

millings from our stock-pile and reheat it into useable material for patching and pothole repairs throughout the year, especially during the winter months when the asphalt plants are closed. This creates huge money savings and a very "green" way of making these repairs.



I would like to take the time to "Thank You" in advance for your cooperation and apologize for any inconvenience that these projects may cause you, but to ensure you that the improvements will be adequate compensation in the end.

Dan Christensen, Streets and Sewer Supervisor—OPERATIONS

Sewer Department in summer mode

The Sewer Dept. consists of sanitary and storm sewers, levee systems and pump stations. With winter over, repair work and upgrades have begun. Although the rains have dampened some of our projects we are making progress. Here is a small portion of work to take place this summer:

Work has started on storm water drainage control in the 600 block of Spencer Ave. and on Crestwood/Zenith (progress has been slowed by the rains.)

We have submitted plans to replace the old storm sewer main on N. 32nd between Ave. B and Ave. C.

We are working on plans for other storm sewer installation in the west end of town

We are performing normal repair operations on manhole tops and storm inlets that need to be repaired or replaced



Existing 28th St. storm station



Construction of the new 28th St. storm station.

We are performing TV inspections of sewers to aid in locating areas needing repairs.

We have already made 3 sanitary sewer repairs this spring.

6th Ave. pump station is getting

upgrades that are needed.

4001 storm station is in the process of having pumps pulled and rebuilt.

Some stations are having pumps replaced.

Major repair work has been done to the discharge line at the River Road storm pump station

A new storm pump station is being built on the levee just West of the Water Works (by the swinging bridge).

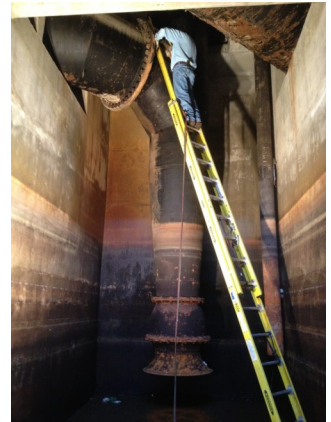
Along with the normal maintenance of the levee system we are making repairs that CORP has requested after the last inspection.

We are removing trees that encroach the levee system.

We are also removing trees that have died due to the flood of 2011 and fallen onto the levee system.

We are making minor repairs to flood gates and to our non automated levee storm pump stations.

All in all, a normal summer for the Council Bluffs Sewer Dept.



Working down in the wet well at the 4001 Pump Station.

Pat Miller, Director— OPERATIONS

Public Works and Library Days

Public works will once again team up with the Library and Dianne Herzog, Youth Services Manager, for the Library Days Public Works Equipment Day July 2, 2014.



This will be the third year for the event.

Public Works will take several pieces of maintenance equipment to the Library for small children to view, paint the snowplow and have the chance to get inside.

Public Works staff is, of course, present to help each child safely in and out of the equipment.

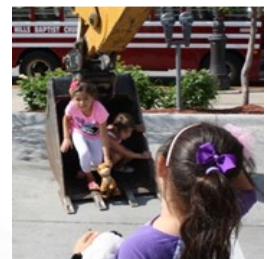


Each child will have the opportunity to move the levers, honk the horns and see the working lights; the



children really seem to enjoy the event!

Each year the event has grown and we are expecting a great turn out this year as well.



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Hank Pangelina— Superintendent—WASTE WATER

Repairing primary clarifiers

In the summer of 2013, the Water Pollution Control Division identified the need to make major repairs to four primary clarifiers. The submerged steel structure in these clarifiers is protected with a coating. That coating has failed, resulting in significant corrosion damage.

Veenstra & Kimm, Inc. of West Des Moines was hired to engineer a repair project. The project scope includes sandblasting the steel structure to remove old coating, repair the corroded areas of the structures, and application of new protective coating to these 40 year old units. A contract was awarded in April 2014 to Eriksen Construction of Blair, Nebraska. A local subcontractor, Abstract Painting and Decorating will perform the sandblasting and

coating work. Project cost is expected to be \$164,400 and should be completed by late this summer. This repair is expected to extend the life of these structures another 10 years.

During construction, two of the four clarifiers will be in various stages of repair, leaving only two clarifiers available for treating wastewater flow. This is a significant challenge, especially during spring and early summer when large rain events can increase flow to the treatment plant by 3 to 4 times. On Sunday May 11, a heavy rain caused plant flow to

increase from a normal rate of 7 million gallons/day to over 29 million gallons/day. The plant was able to provide full and adequate treatment, even though the two clarifiers surcharged to near overflow. With a little luck, we'll have the project completed before Mother Nature hits CB with another rain like that one!



Tanner Eddy—Central Stores Manager—FLEET

Organizing and categorizing

Since the start of the City's Central Stores last spring, the main focus has been on organizing and categorizing our current inventory. This included both the physical re-organization of our store room and electronically categorizing in our inventory management system Infor EAM.

The next goal is improving inventory accuracy and streamlining processes. A big step we have taken to improve both is investing in barcoding. Our goal is for Central Stores to have all inventory labeled so it will

only take a simple scan of the barcode to be able to charge the item out to a work order. Having each item labeled will also dramatically decrease the amount of time it takes to complete our inventory cycle counts (weekly inventory spot checks) and should also help to improve accuracy.

At this moment, barcoding is just starting in Central Stores, but it will soon start expanding to labeling city assets and having mobile



tablets. The combination should allow employees to easily create work orders for the correct asset and assign parts with a simple scan. Although the program is in its infancy with Council Bluffs, the future is looking bright.

